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ABSTRACT

A study was conducted to obtain information about the involvement of the private sector in creating literacy programs for employees. Specifically, it examined the extent to which selected Fortune 500 companies were involved in literacy training and the extent to which materials and methods used were relevant to specific job tasks. An analysis of data gathered from the 57 respondents indicated that almost one-quarter of them offered some type of literacy course for their employees. The programs offered seemed to be developmental--geared toward skills improvement and making workers more efficient--rather than remedial--geared toward reteaching skills that should have been learned in school. Several companies offered speed reading programs. Most programs, however, were in the area of writing. One-third of the respondents expressed the feeling that the schools had not adequately prepared their employees for job literacy demands. Overall, the results indicated that there is a small amount of activity in the area of company sponsored literacy training, and little likelihood that this activity will increase in the near future. (The questionnaire used in the survey is appended.) (FL)

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AN ANALYSIS OF THE CONCEPT OF "LITERACY" AND INVESTIGATION OF THE ROLE OF THE FORTUNE 500 COMPANIES IN LITERACY TRAINING

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By MADELINE BAAR-KESSLER

A thesis submitted to
The Graduate School of Education
Rutgers, The State University of New Jersey
in partial fulfillment of the requirements
for the degree of
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Graduate Program in Educational Psychology

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ABSTRACT OF THE THESIS

An Analysis of the Concept of "Literacy" and Investigation of the Role of the Fortune 500 Companies in Literacy Training

by MADELINE BAAR-KESSLER

Thesis Chairperson: Martin Kling, Ph.D.

Past attempts at defining "literacy" have been futile because of a failure to determine an acceptable criterion of functionality. Efforts have aimed at establishing fixed and quantitative standards. The "fluid" view that has recently emerged regards functionality in terms of the individual's competencies in relation to particular situations. From this perspective researchers have investigated job literacy.

Employers contend that the schools are doing an unsatisfactory job of providing students with the literacy skills needed to function at work. The research indicates that reading at work is different from reading at school. The implication is that if employers offer remedial training, it would be most cost-efficient for literacy programs to teach only those skills needed to accomplish specific job tasks. Similarly, if technological advances are creating concomitant literacy burdens, existing developmental courses should utilize materials and methods tailored to specific occupational needs.

A questionnaire and cover letter were sent to the

training managers of a randomly selected sample of 100 of the Fortune 500 companies. A second letter and questionnaire were sent to those not responding to the initial mailing. Objectives were to gather data about the extent to which companies were involved in literacy training, the extent to which materials and methods were relevant to specific job tasks, and the extent of anticipated private sector involvement in such training.

The instrument allowed respondents whose companies did not offer literacy courses to answer questions in terms of a proposed program. In this way, details about perceived needs and possible future activity would be provided.

Results indicated a small amount of activity in corporate-sponsored literacy training and little potential for increased future activity. It was concluded that the private sector is particularly unwilling to invest in basic skills training.

Some plausible rationales for the dearth of activity included the underreporting of courses due to respondents' misunderstanding of the "fluid" view of literacy, the issue of costs and benefits, and the related idea of "company image" as a cost.

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CHAPTER I

THE PROBLEM

Background of the Problem

Many attempts at defining "literacy" have been made since the middle of this century. Levine (1982) traces the use of the term from the early UNESCO documents of the late 1940s, with their "humanistic" and "global" perspective, to the late 1970s, when a new, more practical concept of literacy had begun to emerge. After the humanists' efforts at eradicating worldwide literacy were abandoned in 1964, several attempts were made at establishing quantitative criteria for literacy. Thus, grade equivalencies and number of years of schooling completed were used as indicators. The overriding problem that emerged stems from the fact that efforts at establishing an acceptable criterion of functionality over a period of more than two decades were conducted at the level of society. However, an emerging perspective views functionality in terms of the individual.

It is with this new view of literacy in mind that researchers have investigated job-related literacy. An individual is considered literate with respect to a particular job task to be accomplished.

The research indicates that the nature of reading at

work is quite different from that at school. Since most individuals go from the world of school to the world of work, differences in literacy demands between the two settings become problematic, and point out the necessity for the gap to be closed. The problem may be exacerbated if claims are indeed valid that rapidly changing technologies result in an increase in job literacy demands. The research suggests that workers at all levels are being affected by this trend.

While a great deal of the literature addresses the issue of literacy demands, it also discusses information-processing strategies employed by workers enabling them to cope with these demands. Mikulecky and Diehl (1979a, 1980) suggest that the schools, in perpetuating a faulty, albeit ingrained societal view of literacy (based on a "literate/illiterate" dichotomy), fail to consider reading demands students will encounter in actual work situations. In doing this, they create an unfair reward system which gears more "literate" students toward the more prestigious occupations. Consequently, since "literacy" gets tied into a reward system, it assumes a "symbolic" role:

> This symbolic role of literacy may, indeed, be a confounding factor in many of our assessments of and programs to develop functional literacy. It may cause some job opportunities to be closed to individuals who, in actual fact, could handle the literacy demands. (1979a, p. 30)

A current belief among employers is that the schools are doing a less than adequate job of providing potential

employees with the literacy skills needed to function in the workplace (Darkenwald, 1983; Lauterborn, 1981; Luster-man, 1977). The American Society for Training and Development reports that employee education and training has possibly become a multi-billion dollar business. In light of this, it would seem that some of this money is being spent in the area of basic reading and writing skills. The findings from the research suggest that it would be most practical and cost-efficient for corporate literacy programs to train workers in only those skills needed to reach an optimal level of performance on job tasks (Bormuth, 1973-1974; Kirsch & Guthrie, 1977-1978; Levine, 1982). Similarly, since the research suggests that technological advances are creating a literacy burden for well-educated, higher-level workers (Guthrie, 1983; Miller, 1982), it would seem that developmental reading programs for this group, if offered, would utilize materials and methods tailored for their specific occupational needs.

Statement of the Problem

The objectives of the study were to obtain information on the following:

1. The extent to which the private sector is currently involved in literacy programs for employees.

2. The extent to which materials and methods being used in existing programs are relevant to specific job tasks.

3. The extent of anticipated private sector involvement in literacy programs.

Importance of the Study

This study was conducted based on the following assumptions:

1. Though there will always be room for improvement in school reading programs, it is not feasible for the schools to attempt to prepare each individual student for a specific job situation. In fact, speaking in relation to the "emergence of high technology," Henry M. Levin and Russell W. Rumberger of the Institute for Research on Educational Finance and Governance at Stanford University comment that "a solid basic education rather than narrow vocational preparation will become more important, not less important, in the future" (Fiske, 1983, p. 43). Lusterman (1977) uses the following comment, offered by a respondent described as an "officer of a leading manufacturing firm," to illustrate this sentiment:

> It's impossible to know what our manpower needs will be in five or ten years, and therefore the basic need is for flexible people who have been trained in reading, writing, basic computational skills, and thinking. We can teach the rest. (p. 62)

Furthermore, today's students cannot be expected to have firmly established job goals, and thus a comprehensive, broad approach to teaching reading and writing skills is the most practical for them.

2. As literacy demands continue to increase, the

private sector will find it more economical to improve the skills of existing personnel resources rather than to hire new workers. Therefore, there will be an increasing need for involvement of business and industry in literacy programs.

Definition of Terms

Literacy was used to refer to an individual's ability to use reading and/or writing skills in order to accomplish a specific life task. Thus, job literacy referred to an individual's ability to use reading and/or writing skills in order to accomplish a specific task encountered on the job.

Job reading was used to refer to any reading behavior that an individual may exhibit while performing a job task.

Functional literacy was used interchangeably with literacy.

Job-related reading was used interchangeably with job reading.

Overview of the Study

A questionnaire was sent to a randomly selected sample of 100 of the Fortune 500 companies. Assuming that the need exists for private sector involvement in job literacy programs, the intent of this study was to provide some data on what is currently being done and what leaders in the private sector feel should be done with regard to such programs. Questions were designed in such a way as to assess

the following:

1. Type of program offered (remedial vs. developmental).

2. Location of program (on-site vs. company-paid courses offered elsewhere).

3. Amount of time spent in classroom instruction.

4. Size of classes.

5. Background of instructors.

6. Occupational levels of students.

7. Materials and methods employed.

8. Willingness of those not currently offering literacy courses to offer them in the future.

Limitations of the Study

No inferences regarding total private sector involvement in literacy programs can safely be drawn, since only Fortune 500 companies were surveyed. However, some rudimentary inferences might be drawn which could lead to further, more comprehensive research in this area. Another limitation is that since the questionnaire had to be kept short, it was not possible to obtain in-depth information.

CHAPTER II

REVIEW OF THE LITERATURE

A discussion of job literacy requirements and their implications for adult reading programs must be considered within the framework of an acceptable definition of "literacy." It follows that acceptable criteria for measuring literacy must also be established. Much of the literature which attempts to define and assess literacy is expository in nature. Bormuth (1973-1974) presents some conceptual models based on statistical research. The writings on the concept of literacy serve as a necessary overview so that studies conducted in the area of job-related reading can be put into proper perspective.

Functional Literacy and Its Assessment

The recent literature addressing the concept and measurement of literacy has two underlying themes, which can be stated as follows:

1. Literacy is not a static concept, but it is a fluid one which changes according to situational factors.

2. Traditional measures of literacy are not valid in occupational settings.

Bormuth raises some key questions and provides

pragmatic approaches to defining and measuring literacy. He comments that currently available criteria for literacy are unreliable, as they are not based on a careful analysis of the concept or on appropriate methods of assessment. He argues against the use of grade level scores. Bormuth speaks of the spurious nature of reports which suggest that students who are falling below grade level are destined for illiteracy. Because grade level scores represent average scores at a given grade level, "we still have no idea whether all, some, or even none of those children whose scores fall below grade level can respond competently to real-world reading tasks" (p. 13). The ability to respond competently to real-world reading tasks comprises Bormuth's definition of literacy.

Kirsch and Guthrie (1977-1978) define functional literacy as "reading (comprehending printed materials) to obtain, retain, or maximize an end or goal which has 'survival' value" (p. 490). Like Bormuth, they too state that there is no evidence to prove that grade equivalency scores are meaningful indicators of performance on real-life reading tasks. Kirsch and Guthrie distinguish between "functional literacy" and "functional competency," defining the latter as a "more inclusive concept" (p. 491). Functional literacy, they say, should be limited to competency with printed materials and does not involve skills or behaviors beyond those with printed materials. The authors state that functional literacy is directly related to some

specified reading task, and thus their definition concurs with that of Bormuth. Functional competency, on the other hand, may be applied to a broader purpose (e.g., an individual's desire to increase his or her general knowledge).

Mikulecky and Diehl have done research on literacy with their focus on the workplace. They speak of "extralinguistic cues" (Diehl & Mikulecky, 1980; Mikulecky & Diehl, 1980) provided by the job environment which enable workers to gain more information than traditional measures of their reading ability would indicate.

Heath (1980) and Levine (1982) discuss literacy from an historical perspective. Like the other recent research analyzing the concept (Guthrie & Kirsch, in press; Kirsch & Guthrie, 1977-1978; Mikulecky & Diehl, 1979a, 1980), their work examines the ramifications of a socially imposed standard of literacy. Heath comments that "traditionally, the functions and uses of literacy have been examined at the level of society" (p. 125). However,

> the concept of literacy covers a multiplicity of meanings, and definitions of literacy carry implicit, but generally unrecognized views of its functions (what literacy can do for individuals) and its uses (what individuals can do with literacy skills). (p. 123)

In a study of an all-black working-class community in the Southeastern United States, Heath found that preschool children acquired some mastery of environmental print without formal schooling or instruction. They acquired literacy skills through association devices provided by the environment, such as the juxtaposition of a printed word

with a spoken word. These children "read to learn information they judged necessary in their lives" (p. 127). The author identified seven types of uses of literacy in the community, and noted that these uses did not reflect those usually considered in the traditional "school-oriented" sense of literacy. She concludes that the definition of literacy must be expanded to include out-of-school contexts, and that "literacy has different meanings for different groups, with a variety of acquisition modes, functions, and uses" (p. 132).

Levine discusses early notions of literacy as being global and representative of a humanistic way of thinking. Early UNESCO documents illustrate this view. This outlook idealistically considered literacy as one of the "requirements for the establishment and maintenance of humane and civilized values" (p. 251). Later attempts at arriving at a functional conception of literacy have incorporated social and economic goals. Levine summarizes the problem succinctly:

> Despite a checkered history and unresolved conceptual difficulties, a continuing series of attempts to give functionality some empirical precision testify to a persistent belief in its utility. . . . It comes as no surprise that, with the exception of rough grade-equivalents, no empirical criterion for functional literacy is forthcoming. . . . Functional literacy seems to require a preexisting notion of functionality. . . . The notion of survival, or adequate functioning, which it involves is irremediably a political and moral abstraction, placing the concept beyond the reach of any strictly empirical operationalizing procedure. (p. 260)

He states that "we must consider the application of reading

and writing skills to specific bodies and types of information" (p. 263). The new perspective on literacy does not include minimum or fixed societal standards, but it "accepts that each individual is an expert arbiter of his or her own literacy and information needs" (p. 264).

Kirsch and Guthrie (1977-1978) see literacy as "continuously distributed" (p. 492), for a person may be literate with regard to one situation at one point in time, but not with regard to another situation at another point in time. Thus, the consensus among researchers is that the new view of literacy does not allow for the "literate/illiterate" dichotomy.

In a later paper, Guthrie and Kirsch (in press) particularly criticize educational researchers for helping to spread alarm about the so-called "reading problem" in the United States by promoting "a traditional perspective which is at variance with a growing scientific literature" (p. 2). They consider the determinant of literacy as being the match or mismatch between prevailing demands encountered by an individual and that individual's competencies.

Performance Criteria

The literature indicates that existing studies of adult literacy neglect to specify performance criteria for literacy, and that they fail to select behaviors and skills relevant and applicable to real-life reading demands. Thus, findings from these studies cannot be considered

generalizable.

Kirsch and Guthrie comment that measures of functional literacy that they have reviewed are inadequate, and that new ones should include "sound measurement principles and a set of purposes useful to decision makers in education" (p. 505).

Bormuth offers an interesting, nontraditional model for measuring literacy. Because this was the only attempt at an operational prototype encountered in the literature, it will be discussed here in some depth.

Bormuth states that we can determine whether a person is literate by observing overt behaviors. Inferences about mental processes are based on these observed behaviors. Measurement is accomplished with either a performance task or a verbal question. Performance tasks are limited if they do not have "pragmatic validity," i.e., if they do not predict behaviors appropriate to real-life tasks. (Guthrie and Kirsch [in press] discuss the same concept and call it "ecological validity.") Another more severe limitation is the fact that it is impossible to determine all tasks to which a given performance task is applicable.

Verbal questions, as compared to performance tasks, lend themselves to transformational procedures on language structures. Thus, they make operational definitions of different classes of literacy behaviors more manageable. However, Bormuth criticizes traditional test-writing procedures as being subject to the biases of the test-maker. He

recommends cloze as the best method for assessing literacy, since the construction of a cloze test is based on replicable principles, and it is not subject to the idiosyncrasies of the test-maker.

Bormuth discusses the identification of a criterion score in terms of a cost-benefit analysis. He states that "the problem of identifying a criterion score . . . consists in finding the level of performance at which the over-all benefits are the greatest" (p. 44). Since we cannot analyze literacy behaviors to the point where we can identify each process involved, Bormuth proposes a model based on reading tasks which have been determined to have direct practical significance and which "seemingly test a variety of reading processes" (pp. 47-48). He describes his work in developing a model for determining criterion scores for a cloze test, which involves cumulative weighted sums of individual effects ("Information," "Conceptual Difficulty," "Rate of Reading," "Willingness to Study") associated with the cloze score. Generally, any test can be used as the criterion test. However, the effects within the instrument must be weighted according to their relevance to the criterion measure and the values people place on them if a realistic criterion score is to be identified.

Adult Reading Habits at Work

An examination of the research pertaining to adult reading habits indicates that there is only a small but

growing body of literature that deals exclusively with literacy in the workplace. Most of the studies survey adult reading habits in the broader context of the community. The most significant work pertaining specifically to job-related reading was authored by Diehl and Mikulecky (1980), Mikulecky (1981, 1982), Mikulecky and Diehl (1979a, 1979b, 1980), and Mikulecky, Shanklin, and Caverly (1979). Though the latter study examined general reading habits among adults in a community, one of its primary concerns was job-related reading. Sticht (1977) has also contributed significantly in the area of job literacy, though his research has been conducted mainly in military settings.

Sharon (1973-1974) conducted a landmark study of adult reading habits in the U.S. While this work does not concern itself particularly with job reading, some of the findings are relevant to that area. Sharon criticizes other studies of literacy for focusing on what people cannot read rather than on what they actually read. He does not attempt to define literacy by traditional measures; instead, he contends that "the meaning of functional literacy can be clarified by knowing the context in which reading occurs as well as the social, economic, and personal characteristics of the reader" (p. 151). The study involved a survey of 5,067 adults who were a cross-section of the American population, chosen on the basis of area probability sampling. Among the findings relevant to job literacy were the following:

1. Thirty-three percent of the readers read for 61 minutes (median) per day at work. While median reading time at school--68 minutes--was greater than that at work, only 5% of the respondents engaged in school reading. Minutes spent reading at school and at work represented the two largest amounts of time reported.

2. The most common type of reading at work reported was the reading of notices or signs (one out of every five persons, for an average of 5 minutes). A wide variety of materials is read at work.

3. A higher socioeconomic status was associated with persons who read at work than with those who did not.

4. A relatively large percentage of persons who read at work considered job-related reading "very important." Manuals and written instructions, forms, letters, memos or notes, and schedules or lists were felt to be among the most important materials.

Sharon reports that persons in white collar occupations read more frequently and read a greater variety of material than blue collar workers. However, other research indicates that one cannot conclude with certainty that higher prestige jobs require more time for reading.[1]

In their study at the workplaces of 107 subjects

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[1]It should be noted that Sharon is candid about the possibility of error resulting from his survey method due to the respondents' failure to recall all materials read (mitigated somewhat by the probing nature of interviewers' questions) and "the deliberate distortion or fabrication of what was read or the amount of time spent on it" (p. 154).

representing the full range of occupational categories in the U.S., Mikulecky and Diehl (1980) found no significant differences on some measures of the relationship between daily job reading time and occupational success levels. One hundred occupations at 126 job sites were studied. "Occupational success" was measured in terms of the variables of status, income, and responsibility. Comparisons were not sufficiently consistent for one to conclude with confidence that higher level occupations tend to require more reading than lower level occupations.

> The most that can be concluded is that some differences exist, with higher levels tending to read more on the job than lower levels; this trend is statistically significant in only a few comparisons and, in fact, on several measures, lower groups score higher than the higher groups. The null hypothesis ["the amount of time reading per day for the job is equal across occupational levels"--p. 44] is therefore accepted in general, with the note that there appears to be some tendency for higher level occupations to read more than lower levels. (p. 48)

In an earlier study of general and job-related reading habits of 284 randomly selected subjects in Anderson, Indiana, Mikulecky et al. (1979) found that while the "competent" job reading group scored more highly on the variables of general reading time, job reading time, scope of literacy demands, depth of literacy demands, and job reading ability, it was not to the point of statistical significance. Interestingly, these researchers also found that "wealthy, middle class, and poor adults seem to read about the same amounts and for the same motivations" (p. 29).

Guthrie and Seifert (1983) examined the reading

activities of a community according to occupational groups. A Reading Activity Inventory and a personal interview were used to obtain data on 143 households randomly selected from a population of 6,000 households. A set of 104 completed inventories was used in the final analysis. Of the four occupational groups used in the study--professional/managerial, small business/clerical, skilled workers, and unskilled workers/unemployed--three reported brief documents as the most frequently encountered reading materials. Since this category included

> bills/invoices . . . newsletters/bulletins, labels or addresses on parcels, notices or signs on billboards, business correspondence, memos/notes, schedules/maps, forms to fill out or read, files or records, legal documents . . . diagram/charts, directions, (p. 501)

it apparently encompassed a great deal of on-the-job reading. Only skilled crafts workers reported "news and business" as the most frequently read category, with brief documents being the next most frequent. Six categories of reading materials were used in the study.

Moe, Rush, and Storlie (1979a), in a project that identified specific literacy skills required in 10 semi-skilled and skilled occupations, found that supervisors of heating and air conditioning mechanics estimated that these workers spent an average of 6 hours weekly on job reading. The research generally suggests that it is difficult, if not impossible, to obtain accurate estimates of job reading time from subjects' self-reports. It is suggested that workers do not fully realize the extent to which reading is

an integral part of their daily activities.

In his study comparing school and job literacy, Mikulecky (1982) reports that in the process of validating the self-reports of the business sample, observers found an average difference of 50 minutes (SD = 5.89) between reported reading time and observed reading time. Subjects grossly underestimated actual time spent reading on the job; observers noted time spent reading was 47% higher than the self-report. "Workers tended to underestimate . . . the amount of time spent reading memos, work orders, invoices, parts lists, and manuals" (p. 176). Jacob and Crandall (1979) cite earlier work by Crandall in which a similar lack of awareness about literacy tasks was found among clerical workers. These workers often reported that they did little reading on the job when, in fact, "they frequently were scanning documents for a number or a name in order to complete a form, looking through files to find the answer to a question, or recording changes from written to typed copy" (p. 2). After more probing, however, these workers became aware of the amount of reading they actually did.

Jacob and Crandall (1979) mention a previous study in which they found similar results when supervisors in a dairy were asked to describe reading and writing activities of those they supervised and to submit sample forms. Observations of personnel indicated that supervisors had under-reported literacy activities and forms. Guthrie

(1983) reports on previous case studies by Kirsch and Guthrie of individuals in a high technology corporation representing 14 occupational titles. He too concluded that people tend to greatly underestimate time spent reading. "However, probing questions and behavioral self-reports unveil a tidal wave of volume and a network of dimensions" (p. 383). Furthermore, contrary to the traditional view of the duration of reading activities, these activities were measured in seconds or minutes less than 5. Sharon (1973-1974) also contends that people tend to overlook the importance of several types of reading because of the relatively short time spent on the tasks. Such reading occurs in the context of daily activities, such as shopping.

Finally, while it is interesting to note that Diehl and Mikulecky (1980) report the same median daily reading time at work as Sharon (61 minutes), the former also report a mean daily time of 112.5 minutes, with a SD of 119 minutes and a range of 0-480 minutes. Thus, tremendous variability in the amount of daily job reading is indicated by Diehl and Mikulecky.

Literacy Strategies and Outcomes

The key work on job-related literacy strategies has been done by Thomas Sticht, who is noted for his studies of literacy demands in the military. A large body of research in this area comes from studies that Sticht and his colleagues conducted when they were affiliated with the Human

Resources Research Organization (HumRRO) in the late 1960s and 1970s.

Sticht (1977) summarizes a Navy study done by Sticht, Fox, Hauke, and Zapf in 1976, about which he comments,

> Our purpose is to gain an understanding of the "ecology of reading" . . . in the world of work within the Navy; and, to the extent that the Navy is characteristic of large industrial or business organizations, to gain insights into the role of literacy in occupational settings in general. (p. 222)

In this study, information on specific reading tasks was sought, and different reading strategies were identified. One hundred and seventy-eight Navy personnel were interviewed for 1 1/2-2 hours. Subjects were 68 students in job skill training schools, 78 active job incumbents, and 32 instructors in training schools. Subjects reported on one "reading-to-do" task and one "reading-to-learn" task. A reading-to-do task was defined as one which required an individual to look up and read information in order to accomplish a job task. A reading-to-learn task was one which required an individual to read information for a job or school task which was to be learned for later use. A total of 325 job reading tasks was reported, of which 60% were reading-to-do and 40% were reading-to-learn. As summarized by Seifert (1979), findings indicated that

> the further away from a school-like setting, the less an individual reported in reading-to-learn tasks. . . . But, the student trainee will be expected to make the transition to worker, and, apparently, will have to make a shift in the type of reading normally engaged in. (p. 361)

The findings also suggested that job-related reading

involves repetitive tasks performed at regular intervals (daily, weekly, etc.). Repetition did not affect retention; 75% of the adults reported they would read the same material the next day. However, a great deal of information was acquired by just reading the job materials and performing the task; this "incidental learning" accounted for almost 75% of the learning.

In terms of specific strategies, reading-to-do tasks most often required searching for and locating information. For the small amount of information remembered, subjects could not recall any particular strategy used. On the other hand, special strategies were reported for reading-to-learn tasks. The following categories and total number of responses for each were indicated:

1. Re-read/rehearse--34%, of which 25% was re-reading the material.

2. Problem solve/question (involves activities such as answering text questions and solving text problems)--30%.

3. Relate/associate (involves pneumonic devices, elaborations)--23%.

4. Focus attention (involves activities such as underlining key words, outlining)--13%.

The reading-to-do tasks were associated with a variety of formats, including "text, figures/forms, tables, text and forms, or tables and figures" (Seifert, 1979, p. 362).

Stiggins (1982) analyzes the information-processing tasks required by reading-to-do and reading-to-learn, and

concludes the following:

1. Automaticity in identifying or constructing word meanings is important with either approach.

2. Formal structure (e.g., table of contents, procedural check points) is quite important in reading-to-do, where the reader generally has access to needed information. For reading-to-learn tasks, the reader must perceive implicit structure in a manner which fits his or her existing knowledge and which suits his or her purpose for reading.

3. Reading-to-learn places more processing demands on the reader; reading-to-do often involves scanning of familiar material and does not require integration of knowledge.

4. Reading-to-do usually requires a "does this make sense" evaluation; reading-to-learn requires a more complex and holistic evaluation.

Kirsch and Guthrie (in press) studied the reading activities of 42 telephone company employees in service or clerical positions. They contrasted two models of reading identified as "prose comprehension" and "text search." The researchers point out the different emphases of these two activities, stating that text search, for example, emphasizes specific goal definitions (i.e., locating a specific piece of information) and use of "access structures" such as indexes, whereas prose comprehension places much higher cognitive processing demands on the reader because of the inherent discourse structures involved.

Mikulecky and Diehl (1980) had each of 107 subjects describe up to five examples of specific reading materials and five examples of specific writing tasks encountered on the job. Based on a series of questions on the Diehl-Mikulecky Job Literacy Survey regarding reading tasks, the following results were reported:

1. Reading-to-do comprised 40.2% of cited tasks.

2. Reading-to-do with incidental learning comprised 22.9% of cited tasks.

3. Reading-to-assess (involves quick skimming to assess usefulness of the material) comprised 25.8% of cited tasks.

4. Reading-to-learn comprised 11.1% of cited tasks.

Of the 339 tasks cited by the subjects, 61% were reported as being done "daily," which indicates that they were highly repetitive. Twenty-two percent were performed two to four times per week.

The differences between the frequencies of reading-to-do tasks and both the reading-to-learn and reading-to-assess tasks were significant. The difference between the number of reading-to-assess and reading-to-learn tasks was also found to be significant. Generally, no significant differences were found among occupational levels in the number of reading-to-do tasks performed. Though significant differences on some measures of job success were found with respect to the number of reading-to-learn tasks, it was concluded that occupational levels do not differ in the

number of such tasks done. However, higher level occupations were found to have significantly more reading-to-assess tasks than any other occupational group.

Questions on the Diehl-Mikulecky Job Literacy Survey also led the authors to conclude that reading tasks encountered on the job are performed in conjunction with specific job tasks in an "information-rich" context. Since the majority of job tasks involve reading-to-do, the job itself provides "extralinguistic cues" for gaining information quickly. Thus, the individual is not required to attend much to the reading material.

Monteith (1980) comments on studies by Sticht and Vineberg which illustrate that workers can perform adequately despite difficult reading material. While reading grade level scores of 7, 8, and 9 were attained by men considered competent in their military jobs as cooks, repairmen, and supply clerks, respectively, readability levels for job reading materials were 9.0 (cook), 14.5 (repairman), and 16.0 (supply clerk).

Mikulecky (1981, 1982) compared literacy demands and competencies of high school students and technical school students on the one hand, and workers on the other. In a study involving 240 subjects from the Indianapolis Standard Metropolitan Statistical Area, he found that workers from all occupational categories (middle level, blue collar, and professional) read for a variety of reasons. Workers reported reading 74% of material "to accomplish something,"

12% "to learn something," and 10% "to evaluate or assess something." Students reported 95% of their reading to be from textbooks. Of the 100 pieces of reading material brought to interviews by high school students, only 2% were used to accomplish something and 0% to evaluate or assess. Students read mainly for facts, while workers from all categories read for more complex purposes, such as for application, comparison, and evaluation.

Data were gathered during 45-60 minute sessions conducted at each subject's work or school location. Three multiple analyses of variance were used to determine whether significant differences existed between worker and student groups on specific variables within the three areas of "Literacy Demands," "Literacy Competencies," and "Literacy Strategies." Other results reported (Mikulecky, 1982) are as follows:

1. On a typical day, middle level workers encountered a significantly wider variety of material than high school students.

2. Custom-made cloze tests indicated that

> middle level workers encountering work-related material were significantly more competent at orally identifying important aspects, summarizing, and suggesting applications than were students with their school-related material. (pp. 412-413)

3. To a significant degree, blue collar workers viewed accurate reading as more important to job success or failure than did technical students at school.

Although, in the final analysis, planned contrasts were not

made on the job reading time variable, subjects' self-reports indicated that students spent less time reading in school than workers did on the job.

Miller (1982) studied the nature of the day-to-day reading activities of technical and managerial personnel in a high-technology corporation. In terms of outcomes, she found that technical people generally read in order to analyze or respond to problems. To carry out solutions, technical people had to use their reading as a foundation for creative action. Managers and supervisors read to review, to develop policy and procedures, and to assign and advise. Managers and technical people often read the same materials, but for different purposes. While both groups mainly did analytical reading, Miller found that technical people may have to read such items as proposals and manuals in greater depth than managers.

Guthrie (1983), in summarizing case studies conducted in a high-technology corporation by Kirsch and Guthrie, reported that goals of reading vary, and rarely is "comprehending the gist" a goal. There are usually multiple goals for reading the same document. Objectives frequently noted included identifying facts, evaluating and revising a document, and synthesizing information from several documents.

Coke (1976) used two variations in a matching task to manipulate the relationships between readability and task-induced processing. Subjects were 68 high school students. The manipulated variables were the type of task ("Search

Task" vs. "Memory Task") and matching condition (target words exactly matched words in the text vs. target words and text words were synonyms). Passages were selected on the basis of readability and were rated as "easy" or "difficult."

Results on reading rate and cloze tests led Coke to conclude that passage difficulty affects reading rate under appropriate task conditions, for task-induced cognitive processing influenced readers to adapt their reading rate to text difficulty. Coke states that though the word-matching tasks are

> not normally thought of as reading activities . . . work in functional literacy has broadened the meaning of reading to include activities in which people use written materials to accomplish a variety of specific goals. (p. 173)

The study demonstrated that "the demands of reading tasks alter the way readers process written material" (p. 173). This finding is relevant to the body of research which indicates that workers, in specific job contexts, can cope with material written at readability levels above their attained reading grade level scores.

In their study of the reading activities of 42 telephone company employees, Kirsch and Guthrie (in press) conducted informal interviews with employees and supervisors and informal observations, and then developed an operational information-processing model for text search. They used four manuals to construct 11 tasks based on this model. Prose comprehension tasks were selected from the

National Assessment of Educational Progress's 1970-1971 Reading Assessment Survey and the Nelson-Denny Reading Test. Subjects were tested on text search and prose comprehension tasks; they then participated in a structured interview so the researchers could obtain information about time spent in reading activities judged by the researchers to be representative of one or the other of the two task domains.

Kirsch and Guthrie found that a much larger percentage of people and time were involved in prose comprehension than in text search during leisure time. On the other hand, only a very small percentage of job reading was reported as involving prose comprehension activities while a very large percentage of job reading involved text search.

In a statistical analysis incorporating the factors (obtained from interviews and testing) of "education," "job experience," "prose comprehension," "text search," "minutes /day prose" and "minutes/day text search," the researchers found the following:

1. The two task domains correlated at a low leve (r = .32), an indication that the two types of reading do indeed differ.

2. Time spent in prose comprehension activities correlated highly with performance on prose comprehension tasks (r = .67) and was uncorrelated with competence in performing text search tasks (r = .16).

3. Time spent in text search activities predicted

performance with the search tasks (r = .57) but was uncorrelated with prose comprehension tasks (r = -.06).

4. Time spent on prose comprehension tasks was not associated with time spent on search tasks (r = .03).

In a regression analysis, the researchers found that prose comprehension activities accounted for more than three times the variance in proficiency with prose than any other variable, and that time spent searching reference materials for specific information accounted for more than three times the variance in text search tasks than any other variable.

Findings led Kirsch and Guthrie to conclude that there are different types of reading competencies which can be viewed as independent from each other and which are distinguishable according to the goals and strategies of the reader. Individuals acquire these competencies to meet specific occupational and personal reading needs.

Mikulecky et al. (1979) were interested in the relationship between demographic variables and adult reading habits and attitudes. With regard to a survey item asking how often subjects read to get something done, these researchers found that the only demographic variable for which significant differences were indicated was sex (males reported this behavior as occurring more frequently than females). Similarly, sex was the only demographic variable for which significant differences were found with regard to adults' use of books or manuals for information about problems on the job (men reported going to books or manuals

more than women did). In fact, the authors of this study conclude that gender is the only demographic variable "to prove individually effective as a predictor of adult reading habit and attitude" (p. 42).

Need for Job-Related Reading Programs

With regard to the apparent need for improved job-related literacy skills, two main themes were noted in the literature. They may be stated as follows:

1. The schools are not adequately preparing students for work.

2. Literacy demands at work are increasing.[2]

Darkenwald (1983) surveyed a stratified random sample of 300 New Jersey businesses and industries to determine the perceptions of training directors regarding barriers and facilitating circumstances for cooperation with educational institutions. He used five embedded scales, which were factor-analyzed to determine the underlying structure of the responses. His findings on the "barriers to cooperation" scale suggest a general dissatisfaction on the part of business and industry with the public schools and a large degree of incompatibility between the two sectors.

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[2]Diehl and Mikulecky (1980), however, argue that a distinction must be made between "literacy demands" and "literacy availability." "It may be, instead, that demands are not increasing; it may be that the opportunities to use print to help carry out a job task are what is increasing" (p. 224). A "false estimation" of the "demands" of a job may unnecessarily close the door to poor readers or those with little education.

Hymowitz (1981), in commenting on the poor reading and writing skills of young people entering the job market, notes that errors due to inadequate literacy skills are not confined to blue collar workers. He reports that at one insurance company, "an estimated 70% of . . . correspondence must be corrected and retyped at least once because typists working from dictation recorders don't know how to puncutate sentences and often misspell words" (p. 1).

Sticht (1977) questioned Navy personnel about the consequences of a reading error leading to a mistake on the job. Most saw some consequence (only 7% reported nothing would happen), which led the author to conclude that these workers saw some functional value for their reading.

Regarding the poor literacy skills of new workers entering the job market, Lauterborn (1981) comments,

> Nor does the problem stop at the inner office door. Executives complain that new hires from college have trouble digesting written material and extracting essential information quickly, and that they seem incapable of writing clear reports and memos. This results in what The Wall Street Journal characterized as a "bizarre" situation where $30,000-a-year MBA's are enrolled in reading and writing courses. (p. 3)

Hymowitz (1981) comments that because of the limited pool of workers with adequate literacy skills, companies feel forced to teach the "three R's." He reports that, according to a Conference Board study on education in industry conducted in 1977, "35% of 300 companies surveyed said they provided some instruction in subjects that are

'really the responsibility of the schools'" (p. 22).[3]

Lusterman (1977) reports on a survey of training programs among corporations having 500 or more employees conducted using a 12-page questionnaire developed by the Conference Board. His report also includes data gathered from interviews with executives from many of these firms. Based on responses from 610 companies, he comments that

> Most business executives are critical of the performance of the nation's schools and colleges in preparing people for work, and deplore particularly the lacks they find in communications and mathematical skills among younger employees. (p. 1)

Along the same lines, he states:

> Large numbers of young people complete their schooling without acquiring what by consensus are basic language and arithmetic competencies or reasoning abilities, while many more fall below the levels that the length and character of their education would seem to predict. (p. 4)

And, with regard to his findings on the "remedial aspects" of training, he notes that

> As a group these executives tend to think poorly of the present performance of the schools and colleges in preparing people for work. Of those who express an opinion in this area, 47 percent think that the performance of the schools in their work-preparation role is only "adequate or fair." Nearly as many, 41 percent, characterize it as "inadequate or poor"; only 12 percent think it is "good or excellent." (p. 61)

Lusterman reports that over 54% of executives surveyed

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[3]It is likely that Hymowitz is referring to the Lusterman (1977) study discussed on this page. It should be noted that that survey included banks and insurance companies, which are not included in the Fortune 500 listing, and which account for a large proportion of remedial programs. Secondly, remedial instruction encompasses training in computational skills, which was not assessed by the present study.

referred to "language skills--English, communication skills, reading, writing, and so on--as areas of deficiency" (p. 62). This problem ranges from entry level blue collar workers who, in Lusterman's terms, are "functionally illiterate" to high-level professionals who cannot organize and present ideas well either orally or in writing.

Based on content analysis of work-related reading materials and responses to questionnaires and a structured interview, Miller (1982) found that both technical and managerial people spent about one-third to one-half of their work week in job-related reading activities. Many of the people believed that about half or less of that time was spent efficiently. The author's summary of content analysis generally indicates that reading materials were often lengthy and complex, they did not provide definitions or explanations (they assumed knowledge of specific technical terminology), they often had no table of contents, format features varied widely, and the materials contained many acronyms.

Mikulecky and Diehl (1980) found that an average of 113 minutes per day was reported for time spent reading on the job. Close to 99% of the sample of 107 subjects reported some kind of daily reading activity. The authors comment that

> while the 113 minute result should not be generalized to the total population, it does indicate that workers, overall, tend to read a great deal on the job, and probably read job materials longer than any other type of material. This conclusion would suggest that

> job-related literacy is the most important type of functional literacy. (pp. 59-60)

Guthrie and Seifert (1983) comment that while workers in unskilled occupations reported less reading per day (60 minutes) than others,

> it is a substantial engagement with print for people who may be the least well prepared for its demands . . . the popular image that unskilled workers are nonreaders or are limited to the reading required by employment applications is contradicted by these findings. (p. 508)

It is interesting to note that first and second highest reported median daily reading time for this occupational group was in the categories of "brief documents" (14.5 minutes) and "reference" (12.5 minutes), the latter of which includes manuals and handbooks. The percentage of unskilled workers who reported reading both content categories was 100%. One is tempted to infer that a large part of this reading, by virtue of its content, was done at work.

Heinemann (1979) randomly selected 39 secretaries working at a large New York City corporation for 1 to 5 years to investigate the use of job-related task tests in analyzing secretaries' performance on job-related reading and writing tasks. All subjects had satisfactory performance ratings from their supervisors; half had been promoted at least once. A test comprised of job-related performance tasks was constructed. These tasks were designed to measure several abilities in the areas of location of information, correspondence, recognition of errors in spelling,

grammar, finding main points, prioritizing, and comprehension of company material (cloze procedure was used). Patterns of error that emerged were: "1) difficulty in following directions, 2) difficulty with capitalization, spelling, and use of verb tenses, and 3) difficulty in judging the significance of business-related events and distinguishing main ideas from details" (p. 241). Heinemann concludes by recommending a seminar for all secretaries in the firm to improve their skills in the areas of language mechanics and grammar, following directions, locating information to solve problems, and prioritizing.

Guthrie (1983) questions the traditional view of reading in light of research on reading in occupational settings. This new concept of reading is especially significant since so much of our time is spent at work, as Sharon indicates, and since most people now read in connection with their work. In addition, technology is moving rapidly ahead, creating new literacy demands. "From people who assemble machines, to research and development leaders, the statement is universal that one must learn how to read novel materials" (p. 383). Guthrie reports that "an overwhelming majority of workers rate the process of gaining information from written materials as imperative" (p. 384).

Finally, Mikulecky et al. (1979) comment that it was possible increases in job reading suggested by increases in overall daily amounts of reading which spurred them to do research in job literacy. They state that

> the most realistic perspective on [job-related reading habits] is to examine the percentage of respondents experiencing reading discomfort. In 1971 Sharon reported less than 1% of respondents experiencing reading difficulties. The findings of the current study reveal 11.6% of the respondents reporting discomfort with job-related reading demands. This increase in discomfort would seem to coincide with the increase in total amount of reading since Sharon's study. (p. 39)

These researchers found a low correlation (.068) between time spent on job-related reading and comfort with reading demands of one's job, and a low correlation (-.043) between going to books for information about problems on the job and comfort with reading demands. Therefore, it was concluded that comfort with reading has little influence over time spent reading on the job, or over an individual's decision to use reading materials to solve job problems. The authors state that, "in light of increased occupation retraining and increased literacy demands, it seems clear that adults are likely to need help in improving reading efficiency if not in improving more basic skills" (p. 43).

Implications and Recommendations for Program Development

While much of the literature points to the need for a new view of "functional literacy" and for job-related literacy programs, very little data are available on specific existing programs. This is especially true with regard to the availability of information on reading programs in business and industry. Some sources mention specific corporations involved in the teaching of literacy skills (Guthrie,

1982; Hymowitz, 1981; Lauterborn, 1981). Lauterborn describes a "highly successful" literacy program toward which his company (International Paper) commits $1 million a year. The company publishes in youth-oriented newspapers and magazines a series of "how to" articles authored by famous people on reading and writing subjects. However, this program is geared toward a mass audience rather than toward workers in a particular job situation.

Perhaps the most comprehensive assessment to date of private sector involvement in literacy programs can be gleaned from the findings reported by Lusterman (1977). According to his data, there is currently very little involvement in this area. However, Lusterman's findings are limited in the sense that the only indication of literacy courses is found under the heading "Basic Remedial."

"Basic Remedial" courses represented the lowest percentage of courses offered by companies in the study (8%; "Management Development-Supervisory" represented the highest, at 60%). The smallest percentage of employees participated in company during-hours courses in this area (1%; the largest percentage--61%--participated in courses in the "Functional-Technical" category). Only 1% of company training expenditures went toward Basic Remedial courses; the highest percentage of expenditures--74%--went toward Functional-Technical training. Only 5% of after-hours company courses were in the remedial category (second lowest to "Other"). Finally, in reporting the effects of the

1974-75 recession on per employee expenditures, the Basic Remedial category was affected the most, with 28% of the courses in this area being reduced or eliminated, and only 11% being increased or started (the smallest amount, in comparison to the other areas of "Managerial and Supervisory," 32%; "Functional and Technical," 27%; and "Other," 22%).

In a factor analysis, Darkenwald (1983) identified a three-"track" curriculum comprised of management training, technical training, and basic skills. His data supported the belief that the basic skills area has low priority in business and industry, and prospects for collaboration with school literacy programs are limited.

Here again, the analysis is limited to remedial courses. In the present study, the focus is exclusively on the teaching of literacy skills within the broad spectrum of corporate training and development activities. Thus, the concept of literacy was broadened to include developmental courses such as speed reading or writing improvement.

A great deal of the literature carries implications about materials to be used and objectives to be considered in programs for occupational literacy. Bormuth (1973-1974) analyzes the concept of literacy in terms of costs and benefits, and he speaks of a comprehensive literacy program as one which selects material according to (a) the comprehension skills it requires of a person and (b) how many of

these skills the person has already mastered. He states that the parameter of identifying corpuses of language tasks to be used in a program should be considered in terms of the following criteria:

1. Availability of monetary resources.
2. Amount of time to be expended.
3. Utility of acquiring the skills to the individual.
4. Commonness of the task.

However, with regard to the fourth criterion, Bormuth notes that though some tasks may occur very rarely, their consequences may be critical, such as the ability to read a sign saying "high voltage."

In light of the previously discussed research by Mikulecky and Diehl (1980) in which workers were found to perform job tasks competently with the aid of extralinguistic cues, it would seem most cost-efficient for a literacy program to use materials specifically geared toward a specific task. According to these researchers, the material is not learned because it is treated as a continually available reference tool. However,

> it is probable that the form the information takes (e.g., chart, graph, etc.) is learned, and is matched with the job-task in the environment; this enables the worker to more quickly use the material in subsequent tasks. (p. 61)

Mikulecky and Diehl report that more than half of the subjects in their study at job sites felt that the particular reading material used in accomplishing a job task was "important, but not vital." Only 21% felt that the reading

material was "vital" to the completion of the job task. The authors report that descriptive statistics for the Competency/Strategy variables indicated that the grade equivalency scores on a job cloze test (constructed from subjects' actual work materials) were higher than those on a cloze test on a general reading topic ($\bar{x}$ = 12.27; $\bar{x}$ = 10.59, respectively). "This difference was significant ($p < .01$), indicating the possibility that subjects are more proficient at reading their job materials than they are reading general materials" (p. 39).

Moe et al. (1979b) studied the literacy requirements of licensed practical nurses at three job sites and three vocational training program sites. Consistent with the findings of other studies of occupational literacy, they found that reading-to-learn was predominant at school, while reading at work was mainly used as a tool. Supervisors of nurses at job sites had difficulty estimating the total time nurses spent reading because reading was done very often for brief periods. This coincides with other reports that job reading time is difficult to measure. Moe and his colleagues concluded that though literacy demands of LPN jobs and training programs were high, "it is probable that individual experience and familiarity with specialized information reduces the perceived demands of job and training program tasks" (p. 33). Similar conclusions were drawn by these researchers in their study of heating and air conditioning mechanics. The literature thus

generally indicates that the selection of reading materials for a job-related literacy program must take into consideration factors other than general reading ability, including familiarity with job-specific vocabulary and concepts and the particular goals of the readers.

Sticht (1977) reviews some of his own studies and the work of others (Wright and Reid, in particular) dealing with people's abilities to use alternatives to written materials, such as flow charts, tables, and matrixes. Findings generally indicated that subjects' problem-solving abilities could be affected by different representations of the same material and that better readers were more proficient at transforming text to alternate reading formats. The implication is that an individual who is having difficulty with a job-related reading task can be taught to break down the reading material into a format which is more manageable to him or her. In this way, the task can be accomplished efficiently.

Many of the authors of job literacy research report that subjects encounter a wide variety of materials on the job. The suggestion throughout is that actual job materials should be used to train workers, rather than reading materials on general topics. Heinemann (1979) recommends for secretaries the use of company research resources, and exercises in prioritizing using a variety of "in-basket" materials actually encountered at work (e.g., memoranda, telephone messages, telexes, reports).

The Lafayette Parish Vocational Center (1975) developed an adult education curriculum which seems practical for use in corporate-sponsored reading programs. The program was based on instructional materials related to employees' learning needs. Information was obtained from employers in the Lafayette, Louisiana, area concerning competencies needed in particular jobs. Printed media were collected from each job site of the participating adults. Commercially available exercises served as models into which job-related content and vocabulary were substituted to "give practice in the needed skill while also providing high utility words with direct relationship to the adult's career area" (p. 6). In addition, exercises were developed by instructors using actual materials from job sites.

Jacob and Crandall (1979) discuss the need for a variety of ethnographic approaches for gathering data on job-related literacy, and point out the problems encountered in collecting samples of documents in literacy research. Different people use these documents for different purposes. "Each of these operations involves different skills, all of which need to be taken into account in assessing literacy demands or creating effective reading improvement programs" (p. 5). Jacob and Crandall contend that adult reading programs are too often "canned" and that they often include "routine exercises in reading comprehension . . . with very little regard for the relationship which exists between

these exercises and the actual reading demands of the job" (p. 7).

Testing

A final word should be said about testing, since recurring discussion about this topic was encountered in the literature. The general consensus among researchers was that tests of job reading proficiency should reflect actual job demands. Mikulecky and Diehl (1979a) argue that functional literacy tests have been given in artificial testing situations in which the individual is deprived of the extralinguistic cues available in the actual task situation. They cite a 1975 study by Sticht in which a low correlation--.30 to .40--was found between reading ability and on-the-job performance tests. Stiggins (1982) argues that proportions of reading-to-do and reading-to-learn tasks as they exist on the job should be reflected on tests of job reading proficiency. Heinemann (1979) asserts that "industry must now use job-related materials to ascertain the skills of all employees" (p. 240). Mikulecky and Diehl (1979b) comment on the lack of available literature on job literacy requirements, and note that "the test reviews in the Mental Measurements Yearbook provide disappointingly little data regarding the reading levels required by the tests" (p. 11). They report that tests analyzed for readability were often found to be excessively difficult and confusing by reviewers in the Eighth Mental Measurements

Yearbook, and reading demands were sometimes found to be excessively high compared to actual reading demands of the job.

Bormuth (1973-1974) describes a statistical procedure to serve as a model for establishing a criterion of literacy. Performance on a random sample of passages from the corpus of job-related reading tasks is compared to a test selected to serve as a standard criterion test. A score obtained on the one standard test will indicate the degree to which an individual is literate with respect to the identified corpus of literacy tasks.

> Thus, when this standard test is administered to some new subject, we can use it to estaimte his corpus literacy level--the percentage of tests on which this person could achieve a criterion level of performance if new passages drawn from the same corpus of tasks are tested. (p. 58)

Summary of Findings from the Literature

Several salient points emerged from the literature of the past decade on the topic of functional literacy. First, any attempt at establishing an arbitrary criterion of literacy is destined for futility. Literacy can only be viewed in terms relative to a particular situation, and thus the operational definition is ever-changing. Second, the nature of job-related literacy is not consistent with the traditional view of literacy. This is illustrated when we examine factors such as reading strategies employed, amount of time spent on literacy tasks, and purposes for reading. Increasing literacy demands at work coupled with

reports from leaders in business and industry about the poor reading and writing skills of recent graduates entering the job market indicate a need for job literacy programs. To make optimal use of resources, those involved in program development and training would be wise to employ materials and methods directly relevant to employees' particular occupational needs. Finally, screening tests administered by employers should be comprised of only those performance tasks which are representative of the tasks encountered in the actual job situation. Otherwise, capable applicants may be unfairly eliminated.

The findings summarized above raised some questions which were addressed by the present study. First, because it was decided that a need for job literacy programs was indicated, an instrument had to be developed to determine if this need was being met (the questionnaire). Since the Fortune 500 companies were among those most likely to have training and development departments, this group was used as a target for the survey.

The literature dealt with both the issue of the schools' inadequacy in teaching basic skills as well as that of new technology creating new literacy demands. Therefore, it was felt that information about both remedial and developmental course offerings should be obtained. (Courses considered to be "remedial" in nature would be those apparently focusing on "basic skills," i.e., skills which should have been learned in school. Those apparently

geared toward the acquisition of new skills--such as reading blueprints or technical report writing--or toward skill improvement--such as reading more efficiently or writing more clearly--would be regarded as "developmental" in nature.) In addition, because so little was encountered in the literature about job literacy programs per se, and what was found only spoke of remedial training, it was felt that the present study would add a needed dimension to the existing body of research on job literacy.

Much of the research tended to deal with the variety of strategies and outcomes associated with task-oriented reading, thus illustrating literacy as a "fluid" concept. A need was seen for some concrete evidence that the nature of company-sponsored literacy programs reflected this variable nature of the concept. Thus, feedback about levels of employees served by particular courses and about materials and methods was sought.

Finally, because the issues raised by the literature will obviously have an impact on the future, it was believed that some feedback about the potential for activity in job literacy training was desirable.

CHAPTER III

PROCEDURE

A questionnaire with accompanying cover letter and stamped return envelope was sent to a randomly selected sample (a table of random numbers was used) of 100 of the Fortune 500 companies. The letter was directed to the "training manager." A listing of the Fortune 500 companies was obtained from a directory found in the May 2, 1983, issue of Fortune Magazine. The next month, a follow-up letter and questionnaire were sent to the 60 subjects who did not respond to the initial mailing.

An attempt was made to pull together the disparate bodies of literature dealing with the concept of job literacy. While much of the research carried themes relevant to the issue of private sector involvement in literacy training, there was very little research specifically dealing with this issue. Thus, the questionnai was designed with these themes in mind, and with the intention of obtaining direct information about the status of job literacy programs within the larger context of corporate training and development. Specifically, it was designed to obtain some information from corporate representatives on the extent of current and anticipated course offerings in reading and

writing, and on the nature of existing programs.

The questionnaire was constructed to allow respondents who did not offer such courses, but who believed they were needed, to answer all the questions in terms of a proposed literacy program. It was felt that if several respondents answered in this mode, some details about perceived needs, and possible future activity, would be provided.

Results were reported in descriptive terms due to the small amount of data to be analyzed and the nature of the instrument. Inferences were based on a consideration of the findings and their relationship to themes and findings encountered in the literature.

CHAPTER IV

FINDINGS AND DISCUSSION

Fifty-seven replies were returned out of the 100 sent to a random sample of the Fortune 500 companies. Among the respondents, the number of employees per company ranged from 636 (rank 497) to 72,000 (rank 39). The company with the highest amount of sales was ranked number 32; that with the lowest amount of sales was ranked number 496.

Of the 57, 13 offered literacy courses to their employees, but one of these was discarded because the respondent went on to indicate that the company offered no reading or writing courses. However, another was added to the count because even though the answer to Question 1 was "no" (see Appendix A), the respondent later stated that her company offered courses in technical and business writing and she completed the questionnaire. Thus, the final count was brought back to 13 (22.8%). (A description of companies offering literacy courses according to product category, sales rank, and number of employees may be found in Table 1.)

Forty-three respondents did not offer literacy courses (75.4%). Of the 43, 5 believed that one was needed (11.6%) and 38 did not (88.4%). One respondent who believed a

Table 1

Description of Companies Offering Literacy Courses Ranked by Sales and Number of Employees[a]

Category[b]	Sales Rank	No. Employees (Rank)
Tobacco	32	72,000 (39)
Aerospace	56	70,200 (41)
Chemicals	113	40,217 (101)
Apparel	153	45,000 (81)
Beverages	204	34,262 (122)
Food	219	4,500 (444)
Industrial and farm equipment	221	18,932 (210)
Food	224	13,600 (253)
Publishing and printing	307	8,900 (334)
Food	313	5,672 (409)
Paper, fiber, and wood products	347	7,900 (366)
Food	363	6,800 (390)
Food	369	11,021 (291)

[a]Figures, obtained from Fortune 500 Directory, are for 1982.

[b]Categories assigned by Fortune 500 Directory according to which industry represents greatest volume of sales for each company.

literacy program was needed commented:

> I think it is alarming, the number of younger, degreed executives (middle management and up) that cannot spell, write or punctuate. Our company does not offer any programs at this time and probably will not.

Another who did not indicate "yes" or "no" offered the following statement: "Only in a very few cases, and then it is usually not a matter of literacy but skill improvement."

Twenty-eight of the 57 respondents (49.1%) believed that the schools had adequately prepared their employees for literacy demands at work; 19 (33.3%) did not. One respondent who had answered in the affirmative qualified this with a comment:

> I answer "yes" with some hesitation. While I guess that schools release graduates with adequate literacy skills, I also feel these skills to be in need of improvement.
>
> I think we all could be doing a better job of improving literacy skills. Employers in particular could demand well-done written work instead of ignoring misspelled words, grammatical errors and poorly constructed paragraphs.
>
> It seems that the receiver is now obliged to "figure out" what the sender is trying to communicate more so than the sender is obliged to convey thoughts clearly.

Another who indicated "yes" also placed a question mark above the word "adequately," probably to convey ambiguous feelings.

While 10 (17.5%) did not indicate "yes" or "no" when questioned about the adequacy of the schools, 2 of the 10 offered comments. One remarked that the schools "could use improvement," and the other stated that careful screening of applicants and "much effort to find qualified non-exempt

personnel with good basic reading and writing skills" was exercised by the company.

Of the 13 companies offering a literacy program, 2 had only a reading course available, 3 had reading and writing, and 8 offered only writing (see Table 2).

The following discussion will address those companies that made reading and/or writing courses available to their employees. A later section will discuss the small number of "hypothetical" programs proposed by respondents who felt literacy courses were needed.

Companies with Literacy Training

Employees Served

One respondent did not indicate the type of employee eligible for the writing course offered by her company. Of the remaining 12 companies with literacy courses, all offered them to clerical/support staff. Ten of the 12 offered the same courses to both clerical/support staff and middle management personnel; of these 10, 3 also offered the courses to employees in upper management. Three respondents checked "other" to describe additional categories of workers to whom such training was available. Information about employee level may be found in Table 2.

Materials and Methods

As shown in Table 3, 8 of the 13 respondents who indicated that their companies offered any type of literacy training, specified that they used actual job materials;

Table 2

Companies with Literacy Training: Course Offerings and Employees Served

Category	Reading? (Title)	Writing? (Title)	Employee Level[a]			
			1	2	3	4 (Description)
Tobacco	No	English Fundamentals	X			
Aerospace	Reading Blueprints	No	X	X	X	"Any who care to apply"
Chemicals	No	"Several, focusing on writing for the function represented"	X	X		
Apparel	No	Writing for Work and Executive Writing Skills	X	X	X	"Professional staff, supervisors"
Beverages	No	Yes (n.g.)[b]	X	X		
Food	Yes (n.g.)	Yes (n.g.)	X	X		
Industrial and farm equipment	Efficient (Speed) Reading	Effective Writing	X	X		

(continued)

Table 2--Continued

Category	Reading? (Title)	Writing? (Title)	Employee Level[a]			
			1	2	3	4 (Description)
Food	No[c]	Yes (n.g.)	X	X		
Publishing and printing	Speed Reading	Yes (n.g.)	X	X		
Food	No	Technical and Business Writing	X	X		"Professionals"
Paper, fiber, and wood products	No	Writing for Results, Business Writing, Proposal/ Technical Report Writing, Practical English and the Command of Words	X	X	X	
Food	Speed Reading	No	X			
Food	No	Technical and Business Writing				(n.g.)

[a] 1 = clerical/support; 2 = middle management; 3 = upper management; 4 = other.

[b] n.g. = not given.

[c] Respondent indicated that speed reading course was discontinued.

Table 3

Companies with Literacy Training: Materials and Methods

Source of Materials			Type of Materials[a]					Approach[b]		
Job	Publisher	Other (Description)	1	2	3	4	5 (Description)	BG	JS	O
X	X (n.g.)[c]					X	X Lecture		X	
X							X Handouts		X	
X						X			X	
	X Time/Life			X		X			X	
		X Instructor					X Consultant-prepared	X		
X	X Consultant[d]				X	X		X		
X	X Deltak	X Employee designed workbook		X		X			X	

(continued)

Table 3--Continued

Source of Materials			Type of Materials[a]					Approach[b]		
Job	Publisher	Other (Description)	1	2	3	4	5 (Description)	BG	JS	O
X	X (n.g.)					X		X	X	
X	X Time/Life			X		X		X		
X						X			X	
		X Whatever prescribed by presenter					X	X		
	X Time/Life; McGraw-Hill			X		X				?[e]
		X Consultant				X	X Handouts	X		

Note. Respondents are listed in same order as Table 2.

[a]1 = microcomputer software; 2 = cassettes; 3 = programmed; 4 = workbooks; 5 = other.

[b]BG = broad, general; JS = job-specific; O = other.

[c]n.g. = not given.

[d]Apparently consultant supplies published materials.

[e]Respondent apparently did not understand the question.

5 of these also used materials supplied by a publisher. One of these 5 also used a third source described as an "employee-designed workbook." Another of the 5 indicated "use consultant" where the publisher's name was to be placed, and it is assumed that the consultant used prepackaged materials.

Two companies used materials supplied by a publisher exclusively, and 3 checked only the "other" category to indicate that the instructor prepared the materials.

The 4 companies that indicated cassettes as their means of presenting course material used prepackaged programs involving the use of video cassettes (Time/Life and Deltak). Ten of the respondents used workbooks. Of these 10, 2 had previously indicated that only actual job materials were used for the course, and it is assumed that these "workbooks" are comprised of pages from actual job manuals and papers. In one case (listed last on Table 3), it was not clear whether the consultant prepared workbooks from company materials or whether they were purchased from a publisher.

Approach

Five companies indicated that they used only a broad, general approach to teaching literacy skills. Six indicated a job-specific approach. One responded that both were used. One respondent placed a question mark by the item, implying that the individual did not understand the question (see Table 3).

Specifics

Eleven programs were offered in-house, one was off-site, and one respondent indicated that courses were offered in both settings. The latter explained that employees were encouraged, through a tuition reimbursement program, to take courses that would improve job performance.

Number of employees per class ranged from 10 to "30+," with one respondent indicating that the company's writing course accommodated 35 students.

The most intensive instruction was provided by a company offering several writing courses. Classes met for 8-9 hours a day for 2-3 days, or a range of 16-27 hours during a half-week period. Another company offered a course that ran 7 hours a day for 3 days--an intensive period totaling 21 hours within 1 week. Another respondent reported 15 hours of instruction over 2 days (7.5 hours each day). In cases where instruction was not as intensive, reported ranges were 1-2 1/2 hours of class per day, one to four times per week, for periods of 3-8 weeks.

Two respondents did not provide specific information about time. One stated that writing courses were offered "on an annual basis;" the other commented that time "varies from location to location."

With regard to how employees were referred for reading and/or writing courses, 8 respondents indicated that this was done by both the employee and the supervisor, 2

indicated self-referrals only, and 1 indicated that employees were referred only by their supervisors. In two cases, it was reported that employees were referred for training by both their supervisors and another source, with "other" being described as "management development specialist" and "training." Although it is not clear what was meant by "training," it is possible that this refers to an orientation period during which it is noted that certain employees may benefit from certain courses.

In 4 cases instructors were reported as being employees of the company, in another 4 they were both employees and consultants hired from outside of the company, and in the last 5 cases it was reported that only outside consultants were used.

Companies with "Hypothetical" Literacy Training

Respondents who indicated that their company does not offer any literacy courses but who felt that one was needed were asked to complete the questionnaire in terms of the type of literacy program they felt should be developed. While five questionnaires fell into this category, two were discarded due to lack of clarity. These two answered "no" to Questions 4 and 5 (see Appendix A).

Of the three respondents providing usable questionnaires (see Table 4 for description), two felt that the schools had not adequately prepared their employees for literacy demands at work. The other was the respondent

Table 4

Description of Companies with "Hypothetical" Literacy Courses Ranked by Sales and Number of Employees[a]

	Sales Rank	No. Employees (Rank)
Motor vehicles	86	61,600 (51)
Food	87	44,700 (82)
Metal manufacturing	459	3,600 (467)

[a]Figures, obtained from Fortune 500 Directory, are for 1982.

[b]Categories assigned by Fortune 500 Directory according to which industry represents greatest volume of sales for each company.

referred to and quoted at the top of page 51. This individual answered Question 3 in the affirmative, and his comment suggests that any courses offered by his company would serve to refine employees' skills, not to fill in any educational "gaps" left by the schools.

Finally, one of the three respondents providing information about a hypothetical literacy program did not answer Questions 7 through 13, but the data she did provide are included in the discussion that follows.

Employees Served

One respondent would offer a writing course to all levels of employees (title not specified), the second would offer a memo and report-writing course to clerical/support staff only, and the third would offer both reading and writing (titles not specified) to clerical/support staff and middle management as well as "production employees" (see Table 5).

Materials and Methods/ Approach

Of the two completing the questions pertaining to materials and methods and approach, one would use actual job materials and indicated the use of workbooks and one-on-one teaching as the method. It is unclear if these "workbooks" would be actual job manuals or employee-designed. The approach suggested was "deficiency-targeted."

Table 5

Companies with "Hypothetical" Literacy Training: Course Offerings and Employees Served

Category	Reading? (Title)	Writing? (Title)	Employee Level[a]			
			1	2	3	4 (Description)
Motor vehicles	No	Yes (n.g.)[b]	X	X	X	
Food	No	Memo and Report Writing	X			
Metal manufacturing	Yes (n.g.)	Yes (n.g.)	X	X		X "Production employees"

[a] 1 = clerical/support; 2 = middle management; 3 = upper management; 4 = other.

[b] n.g. = not given.

The other respondent suggested a "computer-based and self-paced" method with the use of microcomputer software. The approach indicated was broad and general. (Details are shown in Table 6.)

Specifics

Both respondents who answered the set of questions pertaining to specific details of the hypothetical program would have courses available in-house. One would serve 3 employees per class 1 hour a week for 8 weeks. The other would serve 10 employees per class 2 hours per week for 20 weeks. The first would have employees referred by a supervisor, and instructors would be "college professors." The second would have employees refer themselves, and instructors would be outside consultants.

Areas of Difficulty

According to the training representatives of the 16 companies either offering literacy courses or believing they should be offered, significant difficulty was encountered by employees in the following areas: reading comprehension (reported by 2 respondents); reading speed (3); writing clearly (13); and spelling, grammar, and punctuation (7). One indicated "other," and went on to comment, "Does not apply--we're not talking of reading the English language." This person was referring to the fact that his company offered a course in blueprint reading; the author contends that this would involve the area of reading

Table 6

Companies with "Hypothetical" Literacy Training: Materials and Methods

Source of Materials		Type of Materials[a]					Approach[b]		
Job Publisher	Other (Description)	1	2	3	4	5 (Description)	BG	JS	O
X					X	X "One-on-one teaching"			X "Deficiency targeted"
	X "Computer-based and self-paced"	X					X		

Note. One respondent did not provide information on materials and methods.

[a] 1 = microcomputer software; 2 = cassettes; 3 = programmed; 4 = workbooks; 5 = other.

comprehension. Finally, one respondent did not indicate any category as a significant problem area.

Summary of Survey Findings

While the overwhelming majority of respondents did not offer any kind of literacy program, a substantial minority (22.8%)--almost a quarter--did offer reading and/or writing courses. Five respondents believed a literacy program was needed, but only three of these provided usable questionnaires.

A glance at the course titles indicated on the questionnaires suggests that there is very little activity in the area of remedial reading and writing. Most of the courses appear to be geared toward improving job performance through the refinement of job-related literacy skills. This was exemplified by the one respondent who commented that his company's literacy program entailed "several courses . . . focusing on writing for the function represented," and titles such as "Proposal/Technical Report Writing."

While most of the course offerings were in the area of writing, all reading courses specified by type were to improve speed, except for one which taught the reading of blueprints. Only one course (writing) seemed as though it might be remedial, as indicated by the title, "English Fundamentals," and the fact that it was available only to clerical and support staff. In general, though, the focus

was not on basic literacy but on developmental training related to particular job functions.

Although almost half (49.1%) of the training managers who responded to the survey believed that the schools were doing an adequate job of preparing future workers for literacy demands; one-third (33.3%) did not. Among the 10 who did not respond to this question, some may have not answered because they could not wholeheartedly endorse the schools. The findings of this survey suggest that despite the fact that a notable degree of dissatisfaction with the schools exists among leaders in business and industry, most are unwilling to invest in the area of basic skills (remedial) training.

There was obviously some misunderstanding of the concept of "literacy" in two cases: the respondent who checked "no" when asked if her company offered any literacy courses, but who went on to indicate that training in technical and business writing was available, and the one who did not view the reading of blueprints as a form of literacy.

More than half of the respondents with existing literacy training (8 out of 13) indicated that they used actual job materials for instruction. In cases where trainers indicated that prepackaged materials were used (e.g., Time/Life), the skills taught through these programs can be applied to very specific job tasks.

It is possible that some of the respondents may have

misunderstood what was meant by a "broad, general" approach vs. "job-specific literacy tasks" (see Question 13, Appendix A). The intention was to make a distinction between the comprehensive, broad approach to teaching literacy skills encountered in the public schools and the more narrow, function-specific approach more likely to be encountered in a corporate training situation.

Of the four respondents who stated that their teaching approach was exclusively "broad and general," two did not indicate any course titles and one described only the reading course (speed reading) but not the writing. The fourth offered training in technical and business writing, which suggests that the approach would have to be job-specific.

A glance at Tables 2 and 5 suggests that courses in reading and writing were offered to a wide range of employees. The nature of the training varied from intensive courses lasting less than a week to those spread out over a period of about 2 months. Class size varied from small (one respondent answering hypothetically would have liked three students per class) to quite large (over 30). The majority of courses were offered in-house, with the number of instructors hired from within the company versus from outside being roughly equal. Finally, it was reported that in most cases (8 out of the 13 companies already offering courses) employees were referred for training by both themselves and their supervisors.

One last point should be made about the findings of

this survey. Because only 16 questionnaires could be used for analysis, only rudimentary inferences, at best, could be drawn from the results. A glance at Tables 1 and 4 indicates that many of the respondents were in the food industry. This is probably due to chance, since foods was the most frequently occurring description (N = 10) of the total 57 companies that responded. It would be spurious to make any association between jobs in the food industry and the occurrence of literacy programs. Other patterns are obviously not discernible from the small amount of data.

Relationships Between Survey Findings and the Review of the Literature

Definition of Literacy

The survey results indicate that little need is seen among the Fortune 500 companies for literacy programs that are remedial in nature. However, a third of the respondents did not believe that the schools had adequately prepared their workers for job literacy demands, a sentiment also reflected in the literature.

One possible explanation of the discrepancy between the fact that a sizable number of surveyed employers believed that the schools were doing an inadequate job and the lack of remedial programs has to do with the contention that the traditional view of "literacy" does not apply to job situations. The spurious nature of the concept of literacy was discussed by several researchers. As the literature points out, even though such criteria as grade

equivalent scores and language mechanics may be overt indications that workers possess poor literacy skills in the traditional sense, most are probably functioning well enough to handle reading and writing demands specific to their jobs. It is tempting to infer that the majority of workers in this sample are applying their literacy skills in situations much different from those encountered in a school setting.

Similarly, this misunderstanding of the new "fluid" view of literacy may account for so few companies reporting course offerings in reading and/or writing, despite the fact that the term was defined in the initial cover letter as "the ability to read and/or write in order to accomplish a specific task. Therefore, literacy training may involve employees representing a wide range of educational and occupational levels" (see Appendix B). This definition did not appear in the second letter (Appendix C), which simply served as a reminder and referred the potential respondent to the first mailing. Some of the recipients may have discarded the initial letter and may have answered the questionnaire from the point of view of seeing literacy as encompassing only remedial courses.

Although the context is not the same, Lusterman (1977) describes a comparable phenomenon when he is discussing the curriculum of after-hours training programs: "The borderline of job- and career-relatedness shifts with the observer. A course in 'reading improvement' may be

described as remedial by one company and as job- or career-related by another" (p. 40). In the present study, courses in technical writing or blueprint reading, for example, may not have been considered as "literacy training" but as falling into other categories such as the "Functional-Technical" heading used by Lusterman in his report. (This heading was defined as "all courses related to work skills and knowledge other than those specifically included in the managerial group"--p. 45.) Other categories which could conceivably encompass literacy courses might be "communications," "interpersonal skills," or even "management." (Lusterman reports that one management training course offered by Kodak includes classes involving the development of writing and the improvement of reading skills--p. 54.)

Lusterman sums up this problem of interpretation succinctly when he speaks of the concept of "remediation":

> Remediation is an imprecise concept, and is used in industry in a number of ways. For some executives, it refers to the correction of bad work habits or faulty methods; for others the relearning of forgotten knowledge and skills; and for still others any instruction in language. (p. 63)

The Role of the Schools and Remedial Training

In general, survey findings in the area of corporate remedial education concurred with those of Lusterman and Darkenwald (1983), who also found very little activity or potential for activity in this area.

Of interest were those respondents who indicated that

a literacy program was not needed, but who also did not believe the schools had adequately prepared their employees for literacy demands at work. This pattern was found in six cases. It seems likely that these individuals did not believe it was an employer's responsibility to compensate for educational lags. Lusterman makes this point when he speaks of most business executives' disdain of the nation's schools and colleges because of the

> lacks they find in communications and mathematical skills among younger employees. . . . Still, only a small number think that much of their company's programs are in any sense remedial, or that these programs include subjects or skills that "are really the responsibility of the schools to provide." (p. 1)

Another interesting pattern was found among three respondents who felt a literacy program was needed, but who also believed the schools were doing a satisfactory job. (One was the individual previously mentioned [p. 51] who put a question mark by his "yes," suggesting ambiguous feelings.) It is possible that these individuals believed they were offering the types of "literacy" courses that the schools should not be expected to provide. This is exemplified by the fact that one of the three offered a course in reading blueprints, which is not within the purview of general literacy education. This concurs with the contention of Levin and Rumberger as reported by Fiske (1977) that it is the schools' responsibility to provide a "solid basic education rather than a narrow vocational preparation." Lusterman also illustrates this sentiment.

Reading for Work Vs.
Reading for School

The literature suggests that workers tend to underestimate the amount of time spent reading on the job, often because much of this reading involves short periods of time with brief documents. It also suggests that reading on the job is different from reading at school. It is this latter body of research which provides another rationale as to why so few companies offer literacy courses, particularly in the area of basic skills.

Several researchers cite evidence that reading-to-do tasks are the most frequently encountered at work. Mikulecky and Diehl (1980) found that a majority of tasks cited by subjects were done "daily," and the researchers speak of job reading tasks as being performed in an "information-rich" context. The "extralinguistic cues" provided in a reading-to-do situation also lessen the reading burden on the worker. Seifert (1979), in analyzing the work of Sticht (1977), also speaks of the often repetitive nature of job tasks. Furthermore, reading-to-do tasks place relatively few cognitive demands on the reader (Stiggins, 1982). All of these factors explain why it would not be feasible for companies to invest in basic literacy training.

Other evidence in the literature that may explain the dearth of literacy programs among the Fortune 500 companies (as suggested by results of this survey) is found in the work of Sticht and Vineberg, as discussed by Monteith

(1980). Monteith comments on how these studies suggest that workers can perform competently with materials written at readability levels that would be considered too difficult for them by traditional standards. The work of Coke (1976) supports this notion, for she was able to demonstrate that "the demands of reading tasks alter the way readers process written materials." While Seifert (1979) comments that students entering the work force are expected to shift their reading strategies (from reading-to-learn to reading-to-do), it is apparent from the literature that they will be able to do this almost automatically.

Improvement of Skills--
Developmental Training
Needs

While it may indeed be true, as the literature states, that new technology is creating new literacy demands, survey results suggest that, in most cases, the effects of these demands are not so great as to warrant investment in special training. According to the survey, most respondents did not believe a literacy program was needed. However, among the small number of companies offering courses, titles suggested that the training was geared toward improving skills specific to tasks which tended to be technical or sophisticated in nature.

Also, as previously discussed, some of these courses may have been underreported because trainers did not consider them as falling under the category of "literacy."

Costs and Benefits

The body of literature addressing the issue of cost-benefit analysis is also relevant to the results of the survey. Bormuth's (1973-74) analysis of literacy in terms of costs and benefits (discussed on p. 38) suggests that some organizations simply would not find it worthwhile to develop training courses in this area. It is likely that for those companies that do offer such courses as "technical report writing" and "practical English," Bormuth's criteria of "utility of acquiring skills to the individual" and "commonness of task" were met and the expenditures were justified. As Lusterman puts it, "a major portion of the education-training activity of business is undertaken . . . from the judgment that benefits will justify costs and, in fact, represent investment opportunities" (p. 6).

Another factor which might be considered a "cost" is the idea of "company image." As mentioned previously, some courses are probably offered because they deal with specific tasks (i.e., writing a proposal or technical report) performed frequently enough to affect overall productivity. In addition to being concerned about productivity, employers are also involved in promoting a good company image. If workers lacking in basic skills are nonetheless coping well enough to perform their jobs, employers are probably not willing to offer courses that would upgrade those skills. Lusterman states, "One further consideration is known to have influenced companies--the notion that remedial programs are inappropriate to business" (p. 64).

Reading Strategies and Scope of Literacy Demands

The literature establishes that the majority of job-related reading is comprised of reading-to-do tasks, and that workers read for a wide variety of purposes and encounter a broader scope of materials than students. Mikulecky (1982) in particular concluded that workers from all occupational categories read for more complex purposes, and a greater variety of purposes, than students. Course titles reported on questionnaires from the current survey suggest that this is, indeed, the case. While the majority of courses were in the area of writing, they seemed geared toward training employees to write with their readers' purpose in mind. Course titles suggested a variety of writing tasks and thus a variety of purposes.

Finally, the fact that data from the 16 analyzed questionnaires (from companies offering courses and those in the "hypothetical" group) showed that all levels of employees were, or would be, involved in literacy training lends credence to findings in the literature that all occupational groups are affected by increasing literacy demands.

The nature of the present study does not allow for the attribution of findings to definable causes. It can be said, however, that the literature provided background material upon which to base inferences regarding survey findings. At best, themes running through the literature provided some plausible explanations of the results.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study was designed to obtain some information about the involvement of the private sector in literacy programs. This was done by sending a questionnaire to 100 randomly selected companies from the Fortune 500 group.

In the present study, "literacy" was interpreted as reading and/or writing skills used to accomplish a specific task. It was meant to be viewed as a fluid, rather than a static, concept. Thus, a highly educated individual could be "illiterate" with regard to a particular task; and an individual considered illiterate by traditional standards could function adequately in a particular job-reading situation.

The questionnaire was intended to gather data about the extent to which the private sector was involved in literacy programs for employees, and the extent to which materials and methods being used in existing programs were relevant to specific job tasks. It was also designed to obtain some information about the nature of existing programs in terms of types of courses and nature of classes and instruction. Finally, some feedback was desired about

the extent of anticipated private sector involvement in literacy training.

Summary

Fifty-seven questionnaires were returned out of the 100 sent. Almost one-quarter of the respondents offered some type of literacy course. While five respondents not already offering a program felt that one was needed, only three provided usable data.

Unfortunately, not all respondents with existing or "hypothetical" programs indicated course titles on the questionnaire, but a glance at those provided suggested that courses tended to be developmental (geared toward skills improvement and making workers more efficient) rather than remedial (geared toward re-teaching skills that should have been learned in school). Only 1 of the 13 companies with an existing program seemed to offer a basic skills-type course ("English Fundamentals" for clerical support staff). While several companies offered speed reading and one had a course in blueprint reading, most offerings were in the area of writing.

The sentiment of dissatisfaction with the schools reflected in the literature was also found frequently in survey findings--one-third of the 57 respondents expressed feelings that the schools had not adequately prepared their employees for job literacy demands. At the same time, the literature and the data indicated that there was only very

minimal activity--and little potential for future activity --in the area of corporate remedial training.

In light of the emerging new body of research on the nature of job literacy, it came as no surprise that course offerings were related to specific job tasks and purposes. The variety of tasks suggested by course titles went hand-in-hand with research findings about the variety of reading strategies workers employ and the scope of literacy demands that they encounter. Similarly, the finding that a wide range of occupational levels was involved in training concurred with the theme found in the literature that all levels of employees spend a significant amount of time dealing with the printed word.

With regard to program specifics, the majority of literacy training occurred in-house, with some of the classes being intensive (many hours within a span of less than a week) and others being spread over a period of several weeks. Class size varied from small to very large groups (over 30). In the majority of cases, employees were referred for training by both themselves and their supervisors. Instructors were outside consultants as well as employees from within the company.

Finally, the most frequently reported areas of difficulty were "writing clearly" and "spelling, grammar and punctuation." This reflects the fact that most course offerings were in the area of writing, as opposed to reading.

Conclusions

The results obtained from the questionnaire suggested that there is a small amount of activity in the area of company-sponsored literacy training. It does not seem likely that this activity will increase in the future, and the private sector seems particularly unwilling to invest in basic skills training for employees.

In light of the evidence that corporate leaders are disgruntled with employees' basic skills, it was at first surprising to note the dearth of compensatory training. Also, because the literature suggested that advancing technology is creating new literacy demands, it was expected that a higher incidence of developmental-type courses would be reported. However, an analysis of much of the research yielded several plausible rationales as to why there is not more activity in the area of company-sponsored literacy training. These were presented in the previous chapter.

In brief, with regard to remedial training, it was concluded that companies are simply not willing to assume a responsibility that clearly belongs to the schools. In some cases, the effect of these type courses on company image may be considered an undesired cost. Another explanation is that "job literacy" is indeed different from "school literacy," and workers are able to perform their functions satisfactorily despite poor basic skills.

In light of the fact that so many private sector

decisions are based on an analysis of costs and benefits, it seems reasonable to conclude that--despite high literacy demands at work--worker discomfort is often not so prevalent as to warrant expenditures in literacy training.

It was also concluded that courses relevant to this study may have been underreported due to a misunderstanding of the concept of "literacy." The term should have been explained again in the cover letter that went out with the second mailing of the questionnaire. It is also felt that some respondents may not have understood what was meant by "broad, general" approach vs. "job-specific" approach, and that this could have been explained more clearly on the questionnaire.

Because large companies--such as those comprising the Fortune 500 group--have the resources to invest in training programs with a literacy component, it seems reasonable to infer that even less activity in the area of literacy is occurring in smaller firms, which do not have those resources. Lusterman's (1977) findings with regard to corporate training in general lend credence to this point:

> Large companies were more likely to have programs than smaller ones, and the 650 or so firms with more than 10,000 employees that employ three-fifths of all those in the universe embraced by this study, accounted for-three-quarters of total expenditures. (p. 2)

and

> As will be seen, however, formal in-house education and training activities are far less prevalent even in the smallest companies included in this study--those with 500 to 999 employees--than in larger ones,

> and it appears unlikely that they exist at all for most of the employees of still smaller firms. (p. 5)

Finally, better results might have been obtained if service-oriented companies, such as banks and insurance firms, were included in the survey. While the Fortune 500 companies, as defined by Fortune Magazine, must derive over 50% of their sales from manufacturing or mining, a brand new Fortune Service 500 listing which included the top financial, diversified service, life insurance, retailing, utility and transportation companies, was released in the summer of 1983.

According to Lusterman (1977), "remedial programs are found in an unusually high proportion of financial institutions--banks and insurance companies (20 percent)" (p. 64). In addition, financial and insurance companies reported much greater activity in education and training in general than manufacturing, wholesale and retail firms, with transportation, communications, and utilities companies also reporting much activity. Because service-oriented companies deal more directly with the public than those involved in manufacturing (particularly banks and insurance firms), there is probably a greater need for both remedial and developmental reading and writing courses within their corporate training programs.

Suggestions for Further Research

As suggested above, a survey of the Fortune Service 500 companies in addition to the Fortune 500 would present

a more well-rounded picture of corporate activity in the area of literacy training.

A more probing survey is needed to seek more definitive answers as to why there are so few remedial course offerings despite the common sentiment that a significant number of employees entering the job market lack satisfactory basic skills. Also, more information is needed as to why there are so few reading and writing courses which are developmental in nature in light of evidence that literacy demands at work are increasing. Further inquiry should be made to seek answers as to why so little future activity is foreseen in both the remedial and developmental areas within corporate training departments.

Finally, more detailed information about actual materials and methods used in job literacy training programs should be obtained and compared to those typically used in the schools. Actual samples of materials and instructors' manuals should, if possible, be obtained from corporate training managers. This would provide the basis for an interesting study of the differences between "traditional" or school literacy and job literacy.

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APPENDIX A

THE QUESTIONNAIRE

Name _____ Title _____

1. Does your company offer any literacy courses to its employees? Yes ___ No ___

2. If NO, do you believe a literacy program is needed? Yes ___ No ___

3. Do you believe that the schools have adequately prepared your employees for literacy demands at work? Yes ___ No ___

IF YOU ANSWERED NO TO QUESTIONS 1 AND 2, YOU NEED NOT CONTINUE. HOWEVER, PLEASE RETURN THE QUESTIONNAIRE. IF YOU ANSWERED YES TO QUESTION 2, PLEASE RESPOND TO THE FOLLOWING ITEMS IN TERMS OF THE TYPE OF LITERACY PROGRAM YOU BELIEVE SHOULD BE DEVELOPED BY YOUR COMPANY.

4. Does your company offer course(s) in reading? Yes ___ No ___
   Course(s) offered: _____

5. Does your company offer course(s) in writing? Yes ___ No ___
   Course(s) offered: _____

6. What type of employee is served by your literacy program? (Check all that apply.)
   Clerical/support staff ___ Middle management ___
   Upper management ___ Other ___
   (Please describe) _____

7. Where are your classes conducted? In-house ___
   Off-site ___

8. Please indicate the following:
   Approximate no. of employees per class ___ No. of class hours per day ___ Per week ___ Duration of course(s) (No. of weeks) ___

9. Employees are referred by whom? (Check all that apply.)
   Self ___ Supervisor ___ Other ___
   (Please describe) _____

10. Instructors are (check all that apply)
    Employees of the company ___ Consultants from outside company ___ Other ___
    (Please describe) _____

11. Materials used for course(s) are (check all that apply)
Actual job materials (e.g., company memos, manuals) ___
Purchased from publisher ___ (Name of publisher/program) _____ Other ___
(Please describe) _____

12. Which methods/materials are used in your program?
Microcomputer software ___ Cassettes ___ Programmed instruction ___ Workbooks ___ Other ___
(Please describe) _____

13. Which of the following BEST describes the approach taken by your program? (Please check one item only.)
Teaches a broad, general range of skills ___ Teaches job-specific literacy tasks ___ Other ___
(Please describe) _____

14. In which of the following areas do your employees encounter significant difficulty? Reading comprehension ___ Reading speed ___ Writing clearly ___
Spelling, grammar, punctuation ___ Other ___
(Please describe) _____

15. Please use the other side of this sheet to make any comments.

APPENDIX B

INITIAL COVER LETTER

August 1, 1983

Dear Training Manager:

The enclosed brief questionnaire is designed to assess the role of the private sector in literacy programs for employees. It is being sent to a randomly selected sample of 100 of the Fortune 500 companies.

I hope that you are interested in participating in this survey. I believe the research is important in light of reports by business and industry about the inadequate reading and writing skills of workers entering the job market. This, combined with rapidly increasing literacy demands at work, makes the issue of job literacy especially significant.

If you desire a copy of a summary of the findings, please indicate this on the back of the questionnaire. Kindly return the completed questionnaire in the enclosed, postage-paid envelope no later than August 15.

When responding to the questions, please keep in mind that "literacy" refers to the ability to read and/or write in order to accomplish a specific job task. Therefore, literacy training may involve employees representing a wide range of educational and occupational levels.

I am working toward a master's degree in Reading, and the questionnaire will provide descriptive statistics for the completion of my thesis. The completed thesis will be submitted to Dr. Martin Kling, Coordinator of the Reading Curriculum, Department of Educational Psychology, Rutgers University Graduate School of Education. Please be assured that your company will not be identified in any publication or report.

Thank you for your anticipated assistance.

Very truly yours,

Madeline Baar-Kessler

Martin Kling, Ph.D.

Enclosures

APPENDIX C

COVER LETTER USED FOR SECOND MAILING

September 20, 1983

Dear Training Manager:

Last month you received a questionnaire as part of a research project on job literacy. The cover letter, dated August 1, explained that this questionnaire was being sent to a randomly selected sample of 100 of the Fortune 500 companies.

The response rate has been quite good (currently 40%), but we would like to get as close to 100% as possible. Once again, we request that you kindly take a few minutes to respond to this survey, and return the questionnaire in the enclosed, postage-paid envelope by October 4.

The survey will be used to provide descriptive statistics for a master's thesis. The completed thesis will be submitted to Dr. Martin Kling, Coordinator of the Reading Curriculum, Department of Educational Psychology, Rutgers University Graduate School of Education. If you desire a copy of a summary of the findings, please indicate this on the back of the questionnaire. Again, please be assured that your company will not be identified in any publication or report.

Thank you for your anticipated assistance.

Very truly yours,

Madeline Baar-Kessler

Enclosures